INEEL WATER INTEGRATION PROJECT MEETING MINUTES
Wednesday, May 29, 2002, TSB Room 133

Attendees:

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Nature and Extent of Contamination at the Radioactive Waste Management Complex

Don Koeppen, Radiochemistry and Jeff Sondrup, Geosciences presented an overview of the results of monitoring conducted in and around the RWMC, with a focus on the Subsurface Disposal Area (SDA). Following is a summary of the information presented. For a complete information, including locations of monitoring wells, a copy of the presentation is available on the Water Integration Project Meeting Minutes webpage (http://www/environment/water/meeting-minutes.shtml) and background information on the RWMC can be found at http://www.inel.gov/facilities/rwmc-status.shtml.

This information is compiled from monitoring data obtained from many sources (e.g., DOE, INEEL contractors, USGS) from 1971 to present. Over 15,000 aquifer and vadose zone analytical results were evaluated.

Volatile organic compounds (VOCs) and carbon tetrachloride (CCL_4)

- CCl_4 first discovered in GW in 1987
- Subsequent soil gas survey confirmed SDA pits a VOC source

- Inventory search indicated 743-series sludges containing VOCs from Rocky Flats Plant (RFP) were buried in SDA (1966-70)
- 743-series sludges primarily CCl_4 with TCE, PCE, and TCA
- Vadose zone vapor sampling (1988 to present) indicates a large CCl_4 plume, smaller plumes of other VOCs
- GW sampling (1987 to present) indicates CCl_4 concentrations ND to 8 mg/L, TCE ND to 3 mg/L, others ND
- Chloroform present in vadose zone but not in inventory
- Smaller source of methylene chloride (RFP waste but non-743-series)

CCl_4 in Vadose Zone Summary
- CCl_4 detected in soil gas, surface gas flux, and perched water
- CCl_4 plume extends from land surface to aquifer and over 2 km wide
- Highest concentrations less than 100-ft depth
- Concentrations are decreasing in response to OU 7-08 Vapor Vacuum Extraction System
- Source appears to remain active (releases still occurring)

CCl_4 in Groundwater Summary
- 24 wells monitored in vicinity of SDA for CCl_4
- 15 wells have had positive detects, 9 wells are non-detect
- 7 wells have historically exceeded MCL (5 mg/L)
- 5 wells currently exceed MCL
- Deep wells (2) are non-detect
- Concentration trends are upward or steady with leveling-off in some upward trending wells

Other Contaminants

- Carbon-14 – 23 detects out of 250 - 1994 to present; no trends, concentrations are below the MCL – concern is number of detections, widespread nature of detections, and not being able to pinpoint the source

- Nitrate concentrations in aquifer well M6S have been steadily increasing since 1992.
  - Concentrations have increased to approximately 3 mg/L. The MCL is 10 mg/L.
  - At this point, it is unclear if the nitrates are attributable to the SDA, or upgradient sources, or off-site sources.

- Uranium - The uranium concentrations in several lysimeter wells have shown significant increases in concentration since 1997.
  - Concentrations of U-234, U-235 and U-238 have increased to 90 pCi/L, 4 pCi/L and 50 pCi/L, respectively, in soil moisture near Pad A, Pit 5 and the west-end of the SDA.
  - Local background concentrations of U-234, U-235 and U-238 in soil moisture outside the SDA are around 3 pCi/L, 0.5 pCi/L and 1.5 pCi/L, respectively.
  - Some lysimeter wells have been confirmed to contain anthropic uranium.
  - Uranium ratios and the presence of U-236 are used to identify anthropic uranium, and if it is enriched or depleted, giving some insight into the original process associated with waste (reactor operations, weapons manufacture, global fallout

Summary
- Several contaminants detected in vadose zone.
  - Most Pu and Am detections associated with core samples. 0-110'
  - Most elevated U detections associated with soil moisture. 0-35'
  - Most C-14 from lysimeters and PW. Tc-99 = cores and lysimeters.
- CCl_4, nitrates and C-14 detected in aquifer.
  - With the exception of CCl_4 and nitrates, no trends have been observed for any COPCs in the aquifer, only sporadic detections. C-14 detections fairly numerous and widespread.
- Continued monitoring is needed to keep and eye on these contaminants.

The impact of the mobile contaminants in the vadose zone, such as CCl_4, U isotopes, C-14, and Tc-99, can only be assessed through continued monitoring and careful evaluation.

300 new probes have been installed in or below the waste. The Waste Area Group 7 (WAG7) Draft Remedial Investigation/Feasibility Study (RI/FS) is due in December, 2005.

A stable platform to handle data is needed. Waste-O-Scope was developed and other 3-D graphics capabilities are being worked on to fill this need and other tools and techniques are being worked through INRA and other labs.

Review of Action Tracking Log and 30-day Look Ahead

Jan Brown reported on stakeholder activities. High Country RC&D has included the Water Integration Project in their work plan and an ad hoc committee is being developed. Project personnel met with the Three Rivers (Pocatello area) RC&D last week and response with positive. The Mid-Snake RC&D sent a letter expressing their interest and intent to assist in the project and the Wood River RC&D is forming an advisory committee to work with the project on a broader monitoring program.

A meeting to be held in Boise on June 5th to discuss the Water Integration Project and integrating on and off-site aquifer monitoring with State Agencies. Project personnel, INEEL Environmental Monitoring, and USGS will be represented at the meeting (agenda follows).

A new Environmental Monitoring website is available on the INEEL external website that include 2000 monitoring results (http://www.inel.gov/environment/monitoring/).

Next Meeting: June 5th, 1 p.m.

STATE AGENCY BRIEFING – INEEL WATER INTEGRATION PROJECT
Wednesday, June 5, 2002 – DEQ Conference Center
1410 N. Hilton Drive in Boise

8:30 am	Welcome, Introductions and Stage-Setting	Kathleen Trever/Dave Mabe
8:45 am	Introduction to the Water Integration Project	Doug Burns/Jeff Perry
9:30 am	Stakeholder Involvement Plan	Jan Brown/Stacey Francis
10:00 am	Break	
10:15 am	On and Off-Site Aquifer Monitoring Programs	Leah Street, INEEL Joe Rousseau, USGS Dave Frederick, Oversight (?)
11:00 am	General discussion on integrating/expanding aquifer monitoring programs for maximum public benefit. (Jan Brown will facilitate with assistance of Stacey and Jamie)	
12:00 noon	Adjourn	